REMARKS

Claims 1-20 are pending. By this amendment, claims 1, 8, 10, 15, and 17 are amended. The amendments to claims 1 and 8 are supported in the original specification at least at page 7, lines 6 – 34. The amendments to claims 10, 15, and 17 are made solely to provide correct antecedent bases for the claim element recited therein. No new matter is introduced. Reconsideration and issuance of a Notice of Allowance are respectfully requested.

Applicant thanks Examiner Brooks for the courtesies extended to Applicant's representative during a March 24, 2004 personal interview. The substance of the interview is incorporated in the remarks that follow.

On page 2, the Office Action rejects claims 1 – 14 under 35 U.S.C. § 101 because the claims "are directed to a method for selecting solutions without disclosing any computer implemented processing." This rejection is respectfully traversed.

Claim 1 is amended in the preamble to recite the method comprising code executable on a general purpose computer. This amendment is supported in the specification at least at page 7, lines 6 – 34: "Figure 5 shows a block diagram of a computer system 400 ... having instructions that apply the method 100." The "method 100" is the invention recited in claim 1. As agreed to during the personal interview, amended claim 1 is allowable over 35 U.S.C. § 101.

Claim 8, as amended, is the well-recognized claim form known as a Beauregard claim after *In re Beauregard*, 53 F.2d 1583, 35 U.S.P.Q.2d 1383 (Fed. Cir. 1995). As agreed to during the personal interview, claim 8 is allowable with respect to 35 U.S.C. § 101. Claims 2 – 7 depend from claim 1, and claims 9 – 14 depend from claim 8, and for these reasons claims 2 – 7 and 9 – 14 are also allowable under 35 U.S.C. § 101. Withdrawal of the rejection of claims 1 – 14 under 35 U.S.C. § 101 is respectfully requested.

On page 3 the Office Action rejects claims 1 – 20 under 35 U.S.C. § 102(b) over "Genetic Algorithms for Combinational Optimization: The Assembly Line Balancing Problem" (hereafter Anderson). This rejection is respectfully traversed.

In a section entitled "Introduction," Anderson describes the basic purpose, structure, and operation of genetic algorithms. Anderson provides a "model genetic algorithm." Anderson describes a genetic algorithm as a mechanism for solving optimization problems by combining individuals in a population to produce offspring, evaluating the offspring, and eliminating from the population, those individuals that have a low "fitness value." Because the size of the population (i.e., the number of individuals in the population) is held constant,

genetic algorithms will converge to a condition in which the individuals exhibit minimal variation. Anderson then discloses specific applications of the genetic algorithm. Anderson also describes serial and parallel processing of the population. However, nowhere does Anderson disclose or suggest convergence using two populations. Note that Anderson's disclosure of parallel processing merely requires that each individual in a single population "resides at" one processor, and that multiple processors may then operate in parallel to increase effective processing speed. Thus, Anderson does not disclose or suggest combining an individual from one population with an individual from a second population.

The Background section of the present application describes a genetic algorithm that operates on a single population of solutions. As noted in the Background section, such an application of a genetic algorithm has the disadvantage of producing offspring with little diversity. This use of a genetic algorithm is exactly what Anderson discloses. In other words, the Background section of the present application discloses Anderson's use of genetic algorithms and notes the limitations inherent in such a use.
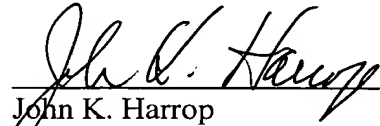
As discussed during the personal interview, and in contrast to Anderson, each of the independent claims 1, 8, and 15 recite combining at least one parent solution from a first population with at least one parent solution from a second population to create offspring solutions. Thus, the inventions recited in independent claims 1, 8, and 15 are fundamentally different from those disclosed in Anderson in that the inventions require first and second populations from which offspring are created whereas Anderson creates offspring from a single population. Using two (or more) populations provides unique advantages over Anderson's approach in that a more diverse population of solutions is generated. Because Anderson does not disclose or suggest all the features of independent claims 1, 8, and 15, these claims are allowable. Claims 2 – 7 depend from allowable claim 1, claims 9 – 14 depend from allowable claim 8, and claims 16 – 20 depend from allowable claim 15, and for these reasons and the additional features they recite, claims 2 – 7, 9 – 14, and 16 – 20 are also allowable. Withdrawal of the rejection of claims 1 – 20 under 35 U.S.C. § 102(b) is respectfully requested.

In view of the above remarks, Applicant respectfully submits that the application is in condition for allowance. Prompt examination and allowance are respectfully requested.

Should the Examiner believe that anything further is desired in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

Date: **March 25, 2004**

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